WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: MO3002

Title: Characterization and Biological Effect Study of Endocrine Disruptors in Effluents from Missouri Sewage Treatment Plants

Focus Categories: Water Quality, None

Keywords: Water Quality, Sewage, Endocrine Disruptors

Start Date: 03/01/2001

End Date: 02/28/2002

Federal Funds: $22,000

Non-Federal Matching Funds: $44,700

Congressional District: 8th

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Abstract

Many environmental substances possess estrogenic activity. Studies have shown that exposure to these chemicals can cause abnormality and failure in reproduction. The purposes of this project are to identify putative estrogenic chemicals in Missouri wastewater sewage treatment plants and to assess total estrogenicity of these chemicals. Biological assays of effluent extracts will be performed using the MCF-7 cell proliferation test and in vivo induction of vitellogenesis of rainbow trout exposed to effluent extracts.

The significance of this proposed study is that this is the first effort to identify estrogenic chemicals and to assess their possible effects on biological systems in Missouri metropolitan wastewater sewage treatment plants. This research is relevant to the concern of public health and ecological impact. The data also may be used by state and federal agencies for environmental risk assessment.